WWF NEPAL PROGRAM
NORTHERN MOUNTAIN CONSERVATION PROJECT
FINAL PERFORMANCE REPORT

PROJECT TITLE:	**NORTHERN MOUNTAIN CONSERVATION PROJECT**
PROJECT NUMBER:	**NP 002200**
DONOR:	**USAID**
COUNTERPART:	**MINISTRY OF FORESTS AND SOIL CONSERVATION (MoFSC), DEPARTMENT OF NATIONAL PARKS AND WILDLIFE CONSERVATION (DNPWC)**
COMMENCEMENT DATE:	**OCTOBER 1, 1996**
COMPELETION DATE:	**OCTOBER 2002**
PREPARED BY:	**NORTHERN MOUNTAIN CONSERVATION PROJECT TEAM**
SUBMITTED ON:	**JUNE 2003**

1. SUMMARY

Shey Phoksundo National Park (SPNP) is spread over 3,555 Km2 in remote Dolpo and Mugu districts, and is Nepal's largest national park. Growing threats to its wildlife, including the snow leopard, wild yak, Tibetan antelope, wild ass, and Tibetan sheep, prompted His Majesty's Government of Nepal to declare Shey Phoksundo a National Park in 1984. It was closed to tourists until 1989 when its southern portion was opened. The northern section was opened on a restricted basis in 1992. Today 3,200 people live in the park and 20,000 on its periphery.

Dhorpatan covers a 1,325 Km2 area of Baglung, Myagdi and Rukum districts in western Nepal. It is Nepal's only hunting reserve. Declared as a protected area in 1984, Dhorpatan is famous for blue sheep hunting. DHR's ghoral, serow, Himalayan thar, barking deer and wild boar are also popular among hunters. Other famed species include lynx, red panda, musk deer and wolves. In summer, about 1,300 households use Dhorpatan valley's grassland to graze their livestock.

The northern mountain region of Nepal has a wealth of bio-diversity. The remote Himalayan valleys have been the centres of evolution for many unique life forms and are a natural museum for rich genetic resources, much of which has been lost due to loss of forest coverage and over-exploitation of certain species of plants for trade and local use. Resources overuse is usually associated with the loss of bio-diversity. A number of threats emanate from the over exploitation of natural resources for fuel, fodder, manure, grazing, trade of wildlife species in terms of furs, skins, bone, musk pods and export of orchids and medicinal plants. Poverty, hunger, illiteracy, unsustainable use of natural resources, lack of

awareness, and inadequate data for monitoring endangered wildlife species like snow leopard and musk deer have been the prime problems for conservation of Shey- Phoksumdo National Park (SPNP) and Dhorpatan Hunting Reserve (DHR). The people of SPNP and DHR are heavily dependent on forests for energy, fodder and timber. The competition between wild ungulates and livestock for pastures has resulted in widespread habitat degradation. The people lack awareness about sustainable natural resource use. There is little information on the actual state of endangered species. Lack of tried manpower has led to poor park management, and the impact of tourism on the local ecology and culture has not been fully understood.

Considering these problems, WWF-Nepal launched the Northern Mountains Conservation Project in and around the SPNP and DHR in collaboration with DNPWC in October 1996. The goal of the project was to conserve bio-diversity in SPNP and DHR; the main purpose was to facilitate local management of natural resources and to improve living condition while safe guarding the regions unique natural heritage.

The success of these first generation activities has led to the start of Strengthened Actions for Governance in the Utilisation of Natural Resources (SAGUN) which is also funded by USAID through CARE-Nepal. This project will focus on strengthening democratic practices i.e. 2nd generation issues of selected institutions and build on the experiences and successes of the past 6 years.

2. SALIENT FEATURES OF THE PROJECT

Project Name:	Northern Mountain Conservation Project
Commencement Date:	October 1, 1996
Completion Date:	October 30, 2002
Project Area:	3,555 Km^2 Shey Phoksundo National Park and BZ areas 11 VDC: 2 VDCs in Mugu 9 VDCs in Dolpa 1,325km^2 Dhorpatan Hunting Reserve
Population:	29,700
Counterparts:	District Forest Office
Line Ministry:	Ministry of Forests and Soil Conservation Department of National Parks and Wildlife Conservation
Other EFEA Partners:	Biodiversity Support Program (BSP)/New Era CARE-Nepal Forests Partnership Project (FPP), Green COM

3. PROJECT GOAL, PURPOSE AND OBJECTIVES

Goal: To conserve biodiversity and improve the socio-economic status of local communities in SPNP and its buffer zone areas and Dhorpatan Hunting Reserve (DHR) by

4.

- Strengthening the capabilities of local user groups, NGOs and Department of National Parks and Wildlife Conservation staff to carry out development and conservation initiatives in the protected areas and buffer zones and
- Promoting sustainable economic growth that increases local incomes.

Purpose: To facilitate local management of natural resources and to improve living conditions while safeguarding the region's unique natural heritage.

Specific Objectives:

Community Natural Resource Management:

- to train local groups in controlling and managing natural resources
- to increase production of fodder, fuel wood, timber and grass
- to increase women's participation in development
- to educate the people about nature conservation
- to help the people manage their natural resources better

Micro-enterprise Development:

- to develop nature-based small businesses to raise rural incomes
- to increase earnings through value-added processing of forest and livestock products
- to promote quality tourism that helps local economy

Protected Area Planning And Management:

- to manage protected areas and buffer zones effectively through local people's participation
- to train government personnel in buffer zone management
- to provide necessary equipment to park/reserve for effective management
- to gather relevant information on plants, animals and the socio-economic condition of the local communities
- to help implement the government's buffer zone regulations

Activity Interventions

a. Capacity building of SPNP Staff
b. Support to tree planting activities
c. Facilitating applied research
d. Formation of user groups
e. Increasing womens' participation
f. Stipend to students
g. Support to Smokeless stoves and Solar lighting
h. Applied research (People and Plants Initiative)

5. MAJOR ACHIEVEMENTS AND IMPACTS

4.1 Capacity building of SPNP staff

Intervention

NMCP's activities in SPNP/DHR are implemented jointly by DNPWC and WWF-NP and in order to ensure effective implementation of project activities it is important that SPNP/DHR Staff benefit from trainings and capacity building activities. The main events include Buffer Zone training, orientation to protection units, staff training conducted by New Era, and Global Positioning Systems (GPS) training.

Effect/impacts

- The most significant effect has been due to the relationship between WWF-NP staff and the SPNP staff. This working relationship has meant that project activities have been carried out effectively and in a timely manner.
- A number of Buffer Zone and management trainings have been given to park game scouts. These management trainings have been crucial in light of the tourism revenue that BZ communities will be able to earn. When NMCP was first established, the knowledge level of junior park staff on BZ management was limited, however, with an increased capacity for this issue, they are well equipped to facilitate communities with BZ management issues.
- Training on the use of equipment such as GPS and map reading techniques have been given to park staff and local assistants/trainees. These skills enable SPNP staff to monitor the park's natural resources, and as Dolpa is renowned for its medicinal and aromatic plants resources, these skills will be well utilised in management and monitoring both legal and illegal harvesting and monitoring Snow leopard movements and Blue sheep.
- An orientation training on the rules and regulations of national parks and buffer zones and the role of the army was held. The army plays a crucial role in protecting the park and developing relations with local communities. It was felt that army personnel lack the concept of involving people in conservation and development of the buffer zone. During this orientation, the concept of community development, need for people's participation, and ways for the army and park to work together were discussed at length. This training has opened doors for further discussion and coordination for effective protection of the park and its buffer zone through developing good relations with local communities.

4.2 Support to tree planting activities (private and community)

Intervention

To date, the project and community members have planted a total of 207,451 seedlings. This represents both community plantations and CFUG plantations. These plantations are aimed at increasing forest coverage and reducing pressure on natural forest for fuel wood, fodder, timber and manure. Taking an average for various plantations the survival rate is estimated at 77%.

The main species grown were Khote Salla (*Pinus roxburghii), Rubania pseudoacacia,* wild olive *(Olea ferruginea), Pinus walichiana* and *Quercus semecarpifolia*

Effects/Impacts

- Through informal interviews with community-based organisations from Ringmo, and Pungmo VDCs, we were able to ascertain that the growth of the community and private forest plantations has increased the forest coverage in these areas. Agroforestry has also been useful in providing sister groups with an alternative source of income.
- In the reporting period of 1998-1999, a fire broke out in Patihalna community forest destroying 65% of the trees. The family responsible for the fire however agreed to replace and water the seedlings from their own expenses. The matter was resolved in a very democratic and systematic manner illustrating the importance placed on plantations as well as the maturity of these community groups.

4.3 Formation of user groups

Interventions

NMCP has been successful in forming 102 user groups (CFUGs, BZUCs, Sister groups, and Eco clubs). In a region as geographically challenging as Dolpa, this is indeed an achievement. The formation and institutionalisation of these groups ensures their legal endorsement thus eligible for 50% of the tourism revenue that the Buffer Zone User Committee will receive once the SPNP and BZ management plan is endorsed by the DNPWC (this plan has been submitted to DNPWC and WWF-NP and SPNP are waiting for comments).

Effects/impacts

- The formation of Sister Groups in the project area has allowed its members to establish savings and credit schemes. Through this micro credit rural financing scheme, many women have had the opportunity to establish income-generating activities. In Pungmo, of Phoksundo VDC, the tradition of weaving "Lalpathi" and "Chaunri Pot" (woollen cloth) has been slowly dying due to the cost involved in buying wool and dye and also because the skill has not been taken up by the younger generation. Through the Sister groups' own initiative and demand, trainings on weaving both carpets, "Lalpathi" and "Chaunri Pot" were conducted. The savings and credit scheme allows sister group members to purchase the required raw materials and the products have been sold to tourists or locally. Sister groups in Ringmo and in the lower belt have also used their savings to cost share in the construction of water grinding mills. Those using the mill pay a small fee and the income generated is put back into the groups' account.

- As of FY 2002, 3,946.2 Ha of community forest has been handed over to Community Forest User Groups benefiting a total population of 29,700.

4.4 Increasing Women's participation

Interventions

As part of the project's efforts to increase women's participation, various activities have been conducted such as NFE classes, both basic and formal, savings and credit schemes, micro enterprise schemes, and the formation of 42 sister groups (mentioned in the formation of UGs). A total of 1,037 attended NFE classes from SPNP and DHR. 812 women attended the tests of which 82% passed. In addition to NFE classes, records keeping classes and micro enterprise classes have also been conducted benefiting a total of 57 women.

Effects/impacts

- In an area where women would rarely voice their opinions in public forums, NFE classes have helped to strengthen women's perception of themselves. By teaching women to read and write and keep accounts, they have been able to establish their own groups where they hold regular meetings and minutes of the meetings, open accounts and establish micro enterprises.
- Each group has a monthly membership fee ranging from 5-20 Rs a month. This together with a start up contribution from NMCP is given on loan to the members with varying interest rates. This micro finance scheme has meant that women have access to rural financing in areas where such facilities would not be available both in terms of location and the system. These women now have the financial capacity to establish their own enterprises to supplement their household income. This financial independence has had a direct effect on the way these women regard themselves. In Pungmo village, the women were so empowered that they established a fund raising activity that was to fine all men displaying any public intoxication. The women claimed that when intoxicated, these men would argue and create problems in the village. This rule was adhered to for 4-5 months, but had an overall effect of reducing the amount of alcohol consumption in the village.

4.5 Stipend to students

Interventions

Student stipends began as an activity to support girl students. However this over the last 2 years, this has expanded to include boy students as well. Students are selected based on their economic status and merit. In total, 21 girl students and 21 boy students are supported in SPNP and 26 were supported in DHR. The project also supports the education of three boy amchi (traditional healers) students in Dhorpatan and one female amchi student from Dho VDC of upper Dolpa.

Effects/impacts

- Children who would otherwise be unable to receive an education, are able to attend school through this activity. Some of the students come from the most challenged families of the village. One girl student's parents are the poorest family of the Ringmo village in addition her father is mentally challenged. Another girl is an eight year old

orphan whose mother abandoned her after remarrying, and a third student an illegitimate child (a common occurrence in villages such as Ringmo and Pungmo) who has a mother but no financial support.

- SPNP and its buffer zone areas are rich in NTFP diversity and in particular medicinal and aromatic plants. These natural resources are an important resource for the local people who use them for their medicinal properties. Directly related to these resources are the Amchis, traditional healers. The project supports the education of 4 students who are studying to become Amchis in an effort to maintain the traditional healing system that is endemic to the Himalayan regions.

4.6 Support to Smokeless stoves and Solar lighting

Interventions

The introduction of smokeless stoves and solar lighting has been a great success in the project area. 110 smokeless stoves and 200 solar panels have been installed over the project period benefiting over 500 individuals. 4 individuals (2 men from Pungmo and 2 from Ringmo) were also trained in maintenance and monitoring the solar sets.

Effects/impacts

- Benefits from the Installation of the smokeless stoves:
  1. Households require less fuel for cooking (information based on personal interviews with households in Pungmo and Ringmo).
  2. Eye and lung infections and other smoke related incidences are reduced due to less smoke;
  3. According to informal interviews with households and sister group members, they have reported that cooking time is reduced by almost a third; where with conventional cooking fires only one pot could be placed on the fire at a time, the improved smokeless stove has the capacity to hold three pots at once.
  4. There are fewer fire related accidents without an open fire.

- Benefits from the installation of Solar panels:
  1. Households no longer need to burn fresh pine wood locally known as "diyalos" to light their rooms;
  2. Individuals are able to work later hours, i.e. after dark: - children can do their homework, and women and men can invest time in income generating activities and NFE classes after their household chores.

Both the solar panels and stoves are partially paid for by the households thus instilling a sense of ownership, an important aspect of any project.

4.7 Applied Research (People and Plants Initiative)

Interventions

The People and Plant's Initiative (PPI) applied ethno-botanical initiative was started in 1997 to address conservation and development issues related to the use of plant resources. PPI is a partnership programme between WWF and UNESCO, which focuses on capacity building in applied ethnobotany aiming at developing more community involvement in management and conservation of plant resources. Some of the most significant achievements from this project have been the establishment of two traditional health care centres (THCC) in Dho

and Phoksundo VDC, support for Amchi networks (Amchis are healers/doctors), plot monitoring, and medicinal and aromatic plants cultivation.

Effects/impacts

- The remoteness and difficult geography of the Dolpa area means that very few health workers are prepared to spend long periods of time at their stations. In addition, local communities value their traditional health system that is practiced by Amchis. The establishment of the THCCs have not only provided local communities with a viable health care system, but it also serves as institution where traditional knowledge can be conserved and as a centre of learning where traditional knowledge of healing can be passed on from Amchis to students.
- Since the Phoksundho THCC's inauguration, a total of 344 patients have attended; 208 men and 136 women. The Dho THCC has been constructed and the finishing works are being carried out.
- Amchis are not only in the Dolpa region, but can be found across the trans Himalayan region, and the importance of coordinating a network of these Amchis was recognised in 1998 with the establishment and registration of the Himalayan Amchi Association (HAA) with HMG Nepal. As part of PPI's efforts to build the capacity of Dolpa Amchis, activities have focused on assisting the Dolpa Amchis establish their own Amchi Association under the larger national level HAA. Thus, the Naychen Buddha Rivo Dolpo Lama Amchi Association registered at the district headquarters in Dunai in July 1999. The association plays an important role in conserving the Amchi tradition and through the HAA gains valuable training and advice on policies and funding resources. Regional and National level workshops have been held throughout the projects' duration which have been important in developing Nepal's ethnobotanical capabilities and creating the basis for effective policies. WWF-NP has worked closely with the Ministry and leading institutions in this area and probably the most significant outcome of this has been that ground level issues that affect the community can and are addressed at the central level. Such activities have helped increase the Amchi network throughout the region, which in light of the new SAGUN project will be an important aspect towards its success.
- Dolpa is renowned for its wealth of medicinal and aromatic plants (MAPS). These plants serve as an important natural resource for the Amchis who use them in the preparation of medicines as well as a source of income for many local and outside people. Unfortunately, illegal and unscientific harvesting of MAPs has led to unsustainable utilisation of these resources; therefore in order to address these issues, PPI has conducted trainings on conservation and sustainable management of MAPs and assisted with establishing MAP plots in and around the SPNP and buffer zone areas. These plots are monitored and maintained by the local people and contain MAPs specific to the SPNP and buffer zone areas.

4.8 Statistical Progress Report Oct 1 1996 to October 2002

S.N	Activities	Unit	Target	Actual	Progress Percentage (%)	Remarks
	Community Natural Resource Mgmt:					
1.1	**Strengthening User Groups**					
1.1.1	Formation of community forest user groups	No	16	14	88	9 SPNP, 4 DHR, 1 under process
1.1.2	Formation of rangeland management com.	No	4	3	75	2 in Mugu 1 in Dolpa
1.1.3	User group study tour	Pers	80	89	111	50 SPNP, 39 DHR
1.2	**Community Natural Resource Mgmt:**					
1.2.1	Establish community nurseries/plantation	Sites	10	16	160	9 SPNP, 1 DHR plantation 6 site
1.2.2	Preparation of forest operation plan (BZ)	No	20	17	85	Under process
1.2.3	Initiate rotational grazing system	No	8	3	38	1 under process
1.3	**Increased Women's Participation:**					
1.3.1	Conduction of NFE classes	No	16	50	313	(44 basic, 6 advanced)
1.3.2	Scholarship to girl students	No	40	47	118	42 SPNP, 5 DHR
1.3.3	Formation of women's groups	No	20	43	215	33 SPNP, 9 DHR
1.3.4	Establish women development credit	No	20	42	210	33SPNP, 9 DHR
1.4	**Environmental Awareness Program**					
1.4.1	Audio - visual materials	set	2	1	50	SPNP only
1.4.2	Formation of eco clubs	No	12	30	250	30 SPNP
1.4.3	Education package to eco clubs	No	12	16	133	16 SPNP
1.4.4	School teachers training (study tour)	Pers	80	83		37 SPNP, 46 DHR
1.5	**Applied Research Activities**					
1.5.1	Initiate winter fodder trial	site	8	3	38	SPNP only
1.5.2	Sustainable harvesting research on NTFP	site	8	8	100	PPI on going since '97'
1.5.3	Pilot studies on value added processing	site	8	1	13	23 person trained in apple processing
1.5.4	Demonstration of medicinal plant cultivation	site	4	4	100	SPNP
1.5.5	Monitoring water quality in lakes	no	5	5	100	SPNP
2	**Micro enterprise Development**					
2.1	**Micro enterprise act. to raise Rural income**					
2.1.1	Training in cottage & craft industries	Pers	40	54	135	34 SPNP, 20 DHR
2.1.2	Develop agro forestry program	Site	16	13	81	12 SPNP, 1 DHR
2.1.3	Formation of cooperative	No	2	0	0	1 under process
2.2	**Improve Living Condition through Value added processing**					
2.2.1	Training in value added processing	Pers	80	99	124	Beehive briquette production
2.3	**Eco tourism Development**					
2.3.1	Formulate eco tourism management plan	No	2	1	50	SPNP draft
2.3.2	Nature guide and lodge operators training	Pers	40	42	105	17 SPNP, 25 DHR
2.3.3	Development of camp site	No	16	14	88	10 SPNP, 4 DHR
2.3.4	Install sign posts and information boards	No	100	80	80	80 SPNP
2.3.5	Tourist promotion training to local people	Pers	20	36	180	36 SPNP
2.3.6	Distribute Solar sets	No	120	200	167	SPNP, Saldang and

						Phoksundo VDC
2.3.7	Distribute improve stoves	No	50	110	220	SPNP, Saldang and Phoksundo VDC
2.3.8	Distribute trekker code	No	70	70	100	SPNP
3	**Protected Area Planning and Management**					
3.1	**Park management Plan**					
3.1.1	Management plan of SPNP, DHR	No	2	1	50	SPNP Draft
3.1.2	Preparation & Collection of Maps	No	2	1	50	SPNP
3.1.3	Workshop on Draft Management Plan	No	2	1	50	
3.2	**Develop Park Infrastructure**					
3.2.1	Procurement of equipment for field work	Set	6	6	100	
3.2.2	Procurement of trans receiver set	Set	10	8	80	4 SPNP, 4 DHR
3.3	**Bio-diversity and Socio economic Database**					
3.3.1	Flora, fauna and socio economic survey	No	2	2	100	Socio economic baseline
3.3.2	Establishment of GIS database	No	1	1	100	Snow leopard/ blue sheep
3.3.3	Periodic survey of wildlife	Site	4	5	125	S. Leopard, bird, blue sheep
3.4	**Buffer Zone Regulation Mechanism**					
3.4.1	Formation of buffer zone committee	No		17		15 in Dolpa & 2 in Mugu
3.4.2	Formation of buffer zone council	No		1		SPNP
3.4.3	Develop buffer zone regulation mechanism	No	40	36	158	Orientation to BZUC members
3.5	**Orientation & Training to DNPWC on buffer Zone Implementation**					
3.5.1	Orientation & training for DNPWC	Pers	40	31	78	
3.6	**Human Resource Development**					
3.6.1	Training on inventory & data analysis tech.	Pers	10	15	150	PPI
3.6.2	Training to park staff on resource management. (MSc)	Pers	2	2	100	SPNP candidate dropped
3.6.3	Protection unit personnel orientation	Pers	120	101	84	SPNP only
3.7	**Others**					
3.7.1	Construct THCC at Phoksundo		1	1	100	Phoksundo, Chunwar
3.7.2	Formation of snow leopard conservation committee		3	5	167	Saldang and Vijer, Komang,Karang, Namdo VDC

There are several activities for which targets were exceeded. The demand for more activities came from the local communities themselves that we felt was an important achievement in itself. These demands were looked at carefully and based on the resources NMCP was able to provide the technical and financial support together with the contribution of the locals (ie for solar, improved smokeless stoves).

Those activities that were not achieved were mainly due to the closure of the DHR project area in 1999. With the heightened political situation, project staff were removed from this area thus NMCP were unable to conduct many of the site specific planned activities.

5. EFEA Goal: To facilitate local control and management of natural resources in the mid and far western development regions in order to improve forest productivity and sustain the environment.

NMCP has been able to achieve this goal through the following:

EFEA IR 1.1
Expanded market participation as measured by forest user households producing/managing forest products in target areas - a total of 16 CFUGs have been formed of which 14 have been legalised. A total of 4,930.6 ha (4,554.60 ha in SPNP and 376 ha in DHR) have been handed over to the communities, and a total of 5265 beneficiaries (3,975 in SPNP and 1,290 in DHR) are involved in practicing active forest management such as thinning, harvesting etc. under the forest operational plan thus improving forest productivity.

EFEA IR 1.2
Sustainable management of the productive resource base is addressed by NMCP through the "change in abundance of keystone species in parks and protected areas". NMCP has been involved in monitoring and measuring the number of snow leopards, blue sheep and flora species in and around SPNP and DHR and its buffer zone areas. In addition, 5 snow leopard committees have been established to monitor these key stone species and to establish rules and regulations for the conservation of Snow Leopards. A study of the Snow Leopard population in 1999-2000 calculated a total of 125 Snow Leopards and an average density of 2-4/km^2 Blue Sheep. Further monitoring of these keystone species is being conducted through funding from WWF-UK.

SO3 "Increased Women's Empowerment".
NMCP has contributed to Women's Empowerment through the establishment of 42 sister groups all of which have established micro credit schemes through which, women have established private businesses, agroforestry plantations, animal husbandry etc. 50 NFE classes were conducted through NMCP of which 812 participants sat for the literacy test where 82% of the participants passed.

6. Issues and Problems.

When NMCP began, the project area focused on Shey Phoksundo National Park and the Dhorpatan Hunting Reserve. However by 1999, the security situation in DHR became far too dangerous for field staff to continue working. Though the security situation in and around the SPNP and its buffer zone areas continued to deteriorate, NMCP was able to continue to work in the areas. The only major set back was on infrastructure, which include the following:

- The attack/burning of Shey Phoksundho National Park headquarters and the army headquarters; because NMCP/WWF-NP field staff's work is in close coordination with the DNPWC and Park Warden, WWF field staff moved from their Ringmo headquarters to Dunai in order to facilitate close coordination with the HMG officers.

Strategies to minimize risk to staff

- Staff maintained a low profile
- Close coordination of activities with HMG's DNPWC staff i.e. Warden, Ranger; Line Agencies; Army and Police officials
- Trainings were conducted by local NGOs
- Relocation of NMCP headquarters from Ringmo to Dunai.
- Regular contact with WWF-NP central level office.

7. Major Achievements – Highlighted

Despite the political situation, NMCP has been able to achieve the following: -

- User groups have been mobilised and institutionalised;
- A Management and Tourism plan for Dolpa has been drafted;
- A mechanism whereby 50% of all revenue is shared has been established;
- 2 traditional health care centres established and utilised;
- Amchi Associations at the national and local level have been established and recognised by the government;
- Conservation awareness has been raised eg through wildlife monitoring established at the local level e.g. snow leopard committees; Thinely Lhundup of Saldang VDC, Dolpa Educational, Social, Environmental Reservation Team (DESERT) of Dunai, and Crystal Mountain Boarding School of Dho Tarap have been awarded the Abraham Conservation Award for grass roots level conservation efforts;
- Solar systems have helped to conserve forests, improve health, education and sanitation. All systems are being used effectively due to integration of the poorest of the poor who are the prime recipients and beneficiaries of this activity;
- The relationship between the Park, People, and District line agencies has been enhanced;
- Women's empowerment through trainings on finance, educational classes and micro enterprises achieved.

8. Lessons learned

- Employement of local staff for project implementation
- Work with a low profile
- Implementation through CBOs and utilise government machinery for sustainability
- Target the poorest of the poor and build consensus so that the majority of local women and men will participate in the project.
- The formation of Eco Clubs has helped in raising environmental awareness not just among schools but also in the communities
- Dolpa has great potential as an eco tourism site, and thus, the development of the SPNP and BZ management plan is imperative for the BZUC to be able to receive the 30-50% tourism revenue.
- Savings and credit and micro enterprise schemes have been successful in the project area where otherwise such financing opportunities would be almost impossible. This activity has been an empowering experience for these women who now know what it is to have some financial independence and to learn a skill or trade that has the potential to create their own economic possibilities. This micro finance scheme has meant that women have access to rural financing in areas where such facilities would not be available both in terms of location and the system.
- The partial funding of smokeless stoves and solar sets has led to a direct reduction of firewood, but it has many other positive effects. In addition, even though households had to bear some of the costs, there was great demand for this facility.
- Student stipends have been successful activities and have provided opportunities to many disadvantaged groups. However, the funding for these students has been on a yearly basis. With the closing of this project, the support for these students is uncertain. An important lesson learned here is the issue of sustainability affecting most importantly, the students.

9. Future

NMCP has focused on the formation of community based organisations and building their capacity through various activities as well as improving the productivity of their natural resources and environment. The achievements of buffer zone communities through the Northern Mountains Conservation Project need to be reinforced and strengthened with a focus on second generation activities. Buffer Zone User Groups, User Committees (17) and a Buffer Zone Council have been formed, and their required operational plans are already prepared. Under the Buffer Zone Council, there are CBOs including 9 Community Forest User Groups (CFUGs), 43 women's groups, 14 Community Eco Clubs, 16 School Eco Clubs, 5 Snow Leopard Conservation Committees, 3 Rangeland Management Committees, 1 Medicinal Plants Management Committee, and 2 *amchi* (traditional doctors) organizations in the buffer zone whose organizational, managerial, technical and governance capacities need to be strengthened to ensure sustainable resource utilization, equitable benefit sharing, biodiversity conservation and the groups' own sustainability.
Communities in SPNP and BZ depend upon pastoralism, subsistence agriculture and natural resources for their livelihood. Owing to the remoteness, harsh terrain and poor transportation facilities, there has been limited implementation of basic government, social, and technical services including health care, education, agriculture and other natural resource management and utilization services. Key socioeconomic constraints relate to the inability of the BZUCs, Committees and community-based organizations (CBOs) to generate income from their natural resources and, hence, link resource management with community development; the lack of decision-making power by women, the poor and other disadvantaged groups due to low literacy and technical skills. Financial constraints relate to inability to generate income due to limited investment and marketing opportunities and limited banking and credit facilities. Although tourism has potential for income generation in the area, the general slump in the industry in Nepal, particularly in mid-western Nepal, has dimmed the prospects for local communities residing in the buffer zone of SPNP. Technical constraints exist due to inadequate skills and capacity among user groups for sustainable management of forest and other natural resources, revenue generation and equitable benefit sharing. Bureaucratic constraints relate to ineffective service delivery such as delayed approval of BZ and CFUG operational plans and inadequate stakeholder consultation for policy formulation and revision. These constraints are magnified in the face of the insurgency and weakening of local institutions, including those involved with the management of local resources, through lack of commitment and political will. Consequently, active involvement of the park staff and BZ user groups in monitoring illegal and unsustainable use of natural resources has weakened.

SAGUN Project is a next-step for NMCP and will institutionalise BZUCs, CFUGs and selected institutions involved with natural resource management and community development and make them fully functional.

Interventions will ensure that natural resources are managed in a sustainable and democratic manner, that benefits derived from natural resources will be equitably distributed, that biodiversity is conserved, and that the groups' sustainability are ensured. Social issues related to women and marginalized groups in decision-making, access and tenure, conflict resolution and advocacy will be addressed. Institutional issues such as policy support for good governance and democracy in community forestry and buffer zone development, institutionalization of CBOs and networking are also areas that need to be strengthened. The project will aim to establish a mechanism for networking and coordination between the Park, BZUCs, local elected bodies such as the district development committee (DDC) and village development committee (VDC) and other stakeholders such as local NGOs, through a district level coordination committee that meets at least twice a year. Given the current political environment, the project will continue to maintain a low profile and implement the

activities through the BZUCs, CBOs and local NGOs in close coordination with security personnel and district line agencies.

Dolpa has a wealth of natural resources, which have great potential. Specifically in the following: -

- NTFP and MAPs for which we require favourable policies, transport, infrastructure and market linkages
- Ecotourism for which we require transport and infrastructure
- Enhance Agriculture e.g. livestock and horticulture, and where possible traditional varieties and traditional methods of agriculture. This would require transport, infrastructure and good market linkages

It is important and necessary that Institutions should be equipped to exploit these opportunities. We are convinced that through SAGUN, mechanisms will be set so that CBOs and Line Agency staff will be strengthened in the utilisation of their natural resources and thus able to exploit these potential income-generating activities.

6.

Annexe 1

a. Summary of PPI sponsored MSc Student, Nagendra Kurumbang's Report.

The present study was undertaken in the bufferzone of Shey-Phoksundo National Park. A total of two months' fieldwork was conducted in two different seasons: Oct./Nov. 2001 and June/July 2002.

Five important medicinal plants were selected on the basis of previous records and local people's information. They were *Nardostachys grandiflora* (Jatamansi), *Neopicrorhiza scrophulariifolia* (Kutki), *Rheum australe* (Padamchal), *Jurinea dolomiaea* (Dhupjadi) and *Valeriana jatamansii* (Sugandhwal). These species were the target species for which density, frequency, coverage, Importance Value Index (IVI), dry biomass, moisture content and their harvesting for trade and conservation practices were studied. For this, ten sampling sites were taken in different areas of the southwestern buferzone and northern part of Shey-Phoksundo National Park. To study the ecological parameters 1m×1m sample plots were taken in different transect lines in different sampling sites. The sampling sites were chosen with emphasis placed on disturbance factors, which placed these sites into different categories ie. very high, high, medium and low. Among the ten sampling sites selected, Jarenikanda, Chudeula, Kotakhola and Sahilabara fall under the very high disturbance category because they are near to populated areas i.e. half a day's walk from the nearby village. Dokpa and Paile fall under high disturbance category as they are found one day's walk from the nearest village. Similarly Mukroman pasture and forest fall under medium disturbance category because they lie inside the core national park region and also very far, ie one and half day's walk from the nearest village. Suibutong and Talgera fall under low disturbance category as they are far from the nearest village and lie inside the different aspects of core national park and people do not collect there.

Density of *Nardostachys grandiflora* at Mukrman pasture was highest with 73.3 individuals per sq. m. while the density of *Rheum australe* at Kotakhola pasture was lowest with 1.1 individuals per sq. m. Among the population of Jatamsnsi studied in four different sites the density at Paile was lowest with 18.3 individuals per sq. m. Taking an average of all the populations, *N. grandiflora* had the highest density with 33.99 individual per sq. m. and was also found to have the greatest Importance Value Index (IVI) 107.25. *Rheum australe* showed the lowest density with 2.16 individuals per sq. m. but the lowest IVI was found for *Neopicrorhiza scrophulariifolia* at 28.73. The disturbance value was negatively correlated

with ecological status of these MAP.

The average dry biomass of rhizome of *Nardostachys grandiflora* was found to be 163.13 kg/ha. Similarly, this value for *Neopicrorhiza scrophulariifolia, Jurinea dolomiaea* and *Valeriana jatamansi* was 157.4 kg/ha, 58.2 kg/ha and 97.8 kg/ha respectively. The average value of moisture content in market going sample of *N. grandiflora, N. scrophulariifolia, J. dolomiaea* and *V. jatamansii* was 24.59%, 15.45%, 15.56% and 48.18% respectively.

According to the DFO records of Dolpa for the last five years, the trade value was found highest in the fiscal year 1997/98 with total volume of 36,784 kg legally traded and total revenue collection was 3,76,123 NRs. This trend has declined in recent years. About 14 medicinal and aromatic plants (MAP) were mostly collected and traded from Pahada VDC alone and these constituted a total volume of 800-900 kg.

Although the harvesting of MAP occurs throughout the year, the peak season is September to November. However, *Cordyceps sinesis* (Yarsagumba) is collected during June-July. According to local trader's estimation about 600-800 kg. of Yarsagumba is annually collected and exported from Dolpa district alone. Yarsagumba is the most popular MAP item for collectors as it can easily be sold from the site of collection and relative to its size, earns more money than other MAPs. After the Yarsagumba, Jatamansi and Samayo are the most preferred ones. These MAPs are also taken to the local processor, Ban Udhyam, for yielding essential oils.

A social survey was conducted in Pahada VDC to obtain information on the socio-economic structure, activities and awareness of local people, etc. Interviews were taken using semistructured questionnaires covering about 11% of total households. From this survey, it was found that almost all people in the VDC rely on traditional agriculture for their livelihood. Two types of seasonal crops are practised in this area namely summer crops and winter crops. Comparatively fertile soil and suitable climatic condition favour the growth of crops and their yield exceeds the consumption capacity of this area. Selling agricultural products especially to the villagers of upper Dolpo has been a common practice for many years. Maize, millet, rice, chino, wheat, buckwheat, barley and potato are the major crops cultivated in this VDC.

MAP collection was the strong occupational attachment with agriculture and about 68.33% respondents were involved in this. Other occupational attachment with agriculture except MAP collection were houses construction, MAP business, porterage, government services etc. and about 31.67% respondents were involved in such occupation. There were different MAP collector's categories such as collection due to Low Income (LI), high Market Demand (MD) and others including collection during herding, collection for personal

expense (pocket money); collection due to high market price (eg.: *Cordyceps sinensis).* Majority of respondents (45.18%) collected MAP due to high market demand.

Cattle herding and MAP collection is also a common practice in the area. Generally, the regular collectors have noticed the phenological stages, habits and habitats of MAP and they use to harvest after flowering season. Amchis are more knowledgeable than ordinary collectors.

Many collectors have realized the rapid depletion of most important medicinal plants but all of them are not properly aware of it. Medicinal and aromatic plants are the most important natural resource of this area but due to unsustainable harvesting, especially by marginalized and poor collectors, these resources are being threatened. In addition, MAP habitats are being destroyed due to fire wood collection.

Although, the regulations contains a set of complex and restrictive procedures to obtain permits in extracting and utilizing forest products, it is not seen effective in the public level. Wild resources are still open access in this area. Royalty rates for some MAP such as Yarsagumba is impractical so that the actual revenue collected by the government is nil.

b. Summary of PPI sponsored MSc Student Maan Bahadur Rokoya

The present study has been undertaken in the Dho-Tarap area, the buffer zone of Shey Phoksundo National Park, Dolpa in order to explore and document medicinally important plants locally used in terms of their distribution patterns, affinities and conservation status, and to explore associated etnoecological knowledge of local people and amchis. Two study visits, over the period of nine months (November, 2001 - July 2002), were made to collect primary information on medicinal plants based on the standard methods of PRA including field observation, interviews and focus group.

Altogether, 274 plant species belonging to 63 families and 172 genera have been recorded in medicinal use. Of the total medicinal plant species, 195 species have already been reported as medicinal plants used for one or more particular diseases in Nepal and 79 plant species have been reported as new records of medicinal plants to Nepal. In addition to medicinal use, food plants constitute 23 species and incense constitutes 10 plants species. Medicinal plants were reported for the treatment of 64 different types of diseases/disorders. A total of eight plant species used in local health care were endemic mostly to west Nepal, ten plant species as new records to Nepal flora and one species, *Gentiana* sp. (=*Gentiana sykesii*) is probably new species to Nepal.

The study area possesses the four types of vegetation: scrubs, meadows, scree vegetation and vegetation of rocky places. The medicinal plants from the study area showed strong affinity with at least eight floristic regions among them the eastern Asiatic region has the highest influence over the area and it is followed by Irano-Turanean region.

The people and amchis of Dho-Tarap area have differentiated the ecological zones into six major land use categories based on the physiographic structures. The local system of classification of the plants s also exists and is based on different plant characteristics.

A total of 43 plant species have been recorded as absolutely necessary and their threat values were assessed by RVA. Out of 43 plant species the five species were cosmopolitan, 32 species have wider distribution in the Himalaya and three species were Himalaya endemic. Similarly, three species fall under different threat categories that have been assigned under national and international regulations.